REMARKS

The Office Action of **January 3, 2002**, has been received and its contents carefully noted. Concurrently filed herewith is a *Request for a One (1) Month Extension of Time* that extends the shortened statutory period for response until May 3, 2002. Accordingly, Applicant respectfully submits that this response is timely filed and fully responsive to the Office Action.

Claims 13, 16, 17 and 21-30 were pending in the present application prior to the aforementioned amendment. By the above actions, claims 13, 16, 17, 21 and 26 are amended merely for clarification purposes and not for reasons related to patentability. Applicant submits that no issue of new matter is raised by this amendment that would require further consideration and/or search. Accordingly, claims 13, 16, 17 and 21-30 remain pending in the present application and, at least for the reasons set forth below, are believed to be in condition for allowance.

A. Information Disclosure Statement

Applicant would like to thank the Examiner for returning initialed copies of the Form PTO 1449s as requested in Paper No. 34. Please note, however, that Applicant's reference to the IDS of January 4, 2001 was incorrect, and instead, should have referred to the IDS of June 4, 2001 (which the Examiner has already considered).

B. 35 U.S.C. §103 Rejection

The Examiner rejects claims 13, 16, 17, 21, 23-26 and 28-30 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,563,367 to ***Sherman***. Applicant contends that the claimed invention clearly defines subject matter which is patentably distinct over the ***Sherman*** patent for at least the following reasons.

1. *Sherman* Fails to Disclose the Claimed Invention

The claimed invention is directed generally to a vapor reaction method including, *inter alia*, the steps of providing a pair of first and second electrodes within a reaction chamber, placing a substrate in the reaction chamber on the first electrode, introducing first and second film forming gases into the reaction chamber using the second electrode, and introducing a cleaning gas into the reaction chamber using the second electrode in order to remove unnecessary layers caused by the first and second vapor depositions from the interior of the reaction chamber.

Applicant respectfully contends that ***Sherman*** clearly fails to expressly teach or inherently suggest each claim limitation necessary to support a *prima facie* case of obviousness under §103. For instance, the Examiner finds that ***Sherman*** discloses parallel electrodes 23 and 25a within a "reaction chamber," and a substrate positioned on electrode 23. What the Examiner fails to find, and what ***Sherman*** clearly lacks, is any sufficient disclosure that the second electrode 25a has a dual function of introducing both (1) a film forming gas and (2) a cleaning gas into the reaction chamber. As shown in FIG. 4, ***Sherman*** explicitly discloses that an etching gas is supplied from gas storage tank 46 to the interior of process chamber 45 via line 48 and inlet 22. Thus, from the express language in the ***Sherman*** patent, there is no desire by ***Sherman*** to use electrode 25a as an inlet for introducing the etching gas into chamber 45. More particularly, ***Sherman*** fails to teach the introduction of a film formation gas and an cleaning or etching gas through one of a pair of electrodes while a substrate is placed on the other of the pair of electrodes.

On the other hand, the method in accordance with the claimed invention requires the introduction of the film forming gases and the cleaning gas into the reaction chamber using a single means, namely, the second electrode. The Examiner points to no express teaching in the ***Sherman*** reference

as in the presently claimed invention. There are also no secondary references cited in the rejection that overcome the deficiencies of the ***Sherman*** reference. Accordingly, insofar as ***Sherman*** fails to disclose every feature of the claimed invention, *prima facie* obviousness cannot result.

2. Evidence of Secondary Considerations

Applicant further contends that certain non-obvious benefits are obtained when introducing a film forming gas(es) and a cleaning gas through the same electrode. More particularly, the present inventor has discovered that by using a single electrode to introduce both the film forming gas(es) and the cleaning gas, the cleaning of the reaction chamber is significantly improved since the cleaning gas will essentially travel in the same path as that of the previously introduced film forming gases. Thus, a higher rate of etching can be obtained.

Such a high etching rate cannot be obtained using the ***Sherman*** device since ***Sherman*** proposes using separate means in which to introduce the film forming gas and the etching gas. This would invariably result in inefficient cleaning of the chamber since, when compared to the claimed invention, some areas of the chamber may not be exposed in sufficient concentrations of etching gas to remove the unnecessary layers caused by film depositions from the reaction chamber. It is respectfully contended that the foregoing evidence of secondary considerations is further indicia of the non-obviousness of the claimed invention.

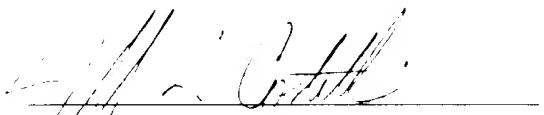
Accordingly, insofar as ***Sherman*** fails to disclose every feature of the claimed invention, the above-noted non-obvious advantages yielded by the claimed invention cannot be achieved.

Conclusion

Accordingly, Applicant respectively submits that the pending claims are in proper condition for allowance and reconsideration and withdrawal of the pending rejections are requested. If the Examiner believes further discussions with Applicant's representative would be beneficial in this case, he is invited to contact the undersigned.

Respectfully submitted,

NIXON PEABODY LLP



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Marked-Up Copy of Amended Claims

13. (Thrice Amended) A vapor reaction method comprising the steps of:

[preparing] providing a pair of first and second electrodes within a reaction chamber, said pair of electrodes being arranged substantially in parallel with each other;

placing a substrate in the reaction chamber on said first electrode so that a first surface of said substrate faces toward said second electrode;

introducing a first film forming gas into said reaction chamber through said second electrode;

exciting said first film forming gas in order to form a first insulating film by first vapor deposition on said substrate placed in said reaction chamber;

introducing a second film forming gas into said reaction chamber through said second electrode;

exciting said second film forming gas in order to form a second insulating film by a second vapor deposition on said first insulating film in said reaction chamber wherein said first and second insulating films contact each other;

removing said substrate from said reaction chamber after the formation of the first and second insulating films;

introducing a cleaning gas comprising nitrogen fluoride into said reaction chamber through said second electrode;

exciting said cleaning gas in order to remove unnecessary layers caused the first and second vapor depositions from an inside of the reaction chamber,

wherein one of the first and second insulating films comprises silicon nitride and the other one of the first and second insulating films comprises a different material from said one of the first and second insulating films.

[preparing] providing a pair of first and second electrodes within a reaction chamber, said pair of electrodes being arranged, substantially in parallel with each other;

placing a substrate in a reaction chamber on said first electrode so that a first surface of said substrate faces toward said second electrode;

introducing a first film forming gas into said reaction chamber through said second electrode;

exciting said first film forming gas in order to form a first film comprising SiO_2 by vapor deposition on said substrate placed in said reaction chamber;

introducing a second film forming gas into said reaction chamber through said second electrode;

exciting said second film forming gas in order to form a second film comprising silicon nitride by vapor deposition on said first film in said reaction chamber;

removing said substrate from said reaction chamber after the formation of the first and second films;

introducing a cleaning gas comprising nitrogen fluoride into said reaction chamber through said second electrode;

exciting said cleaning gas in order to perform a cleaning to remove unnecessary layers deposited on an inside of the reaction chamber due to the formation of the first and second films.

17. (Thrice Amended) A vapor reaction method comprising the steps of:

[preparing] providing a pair of first and second electrodes within a reaction chamber, said pair of electrodes being arranged substantially in parallel with each other;

placing a substrate in a reaction chamber on said first electrode so that a first surface

electrode;

exciting said first film forming gas in order to form a first film comprising silicon nitride by vapor deposition on said substrate placed in said reaction chamber;

introducing a second film forming gas into said reaction chamber through said second electrode;

exciting said second film forming gas in order to form a second film by vapor deposition by vapor deposition directly on said first film in said reaction chamber;

removing said substrate from said reaction chamber after the formation of the first and second films;

introducing a cleaning gas comprising nitrogen fluoride into said reaction chamber through said second electrode;

exciting said cleaning gas in order to remove unnecessary layers formed on an inside of the reaction chamber due to the formation of the first and second films.

21. (Twice Amended) A method of fabricating electronic devices comprising the steps of:

[preparing] providing a pair of electrodes within a reaction chamber wherein said pair of electrodes are opposed in parallel with each other;

placing a substrate in a reaction chamber wherein said substrate is held by one of said electrodes;

introducing a first film forming gas into said reaction chamber through the other one of said electrodes;

exciting said first film forming gas to form a first film by first chemical vapor deposition on said substrate;

exciting said second film forming gas to form a second film by second chemical vapor deposition on said first film, said second film comprising a different material from said first film;

removing said substrate from said reaction chamber after the formation of said first and second films;

introducing a cleaning gas into said reaction chamber through said other one of the electrodes; and

conducting a cleaning of an inside of said reaction chamber by using said cleaning gas to remove layers caused by at least said first and second vapor phase deposition,

wherein one of the first and second films comprises silicon nitride.

26. (Twice Amended) A method of fabricating electronic devices comprising the steps of:

[preparing] providing a pair of electrodes within a reaction chamber wherein said pair of electrodes are opposed in parallel with each other;

placing a substrate in a reaction chamber wherein said substrate is held by one of said electrodes;

introducing a first film forming gas into said reaction chamber through the other one of said electrodes;

exciting said first film forming gas to form a first film by first chemical vapor deposition on said substrate;

introducing a second film forming gas into said reaction chamber through the other one of said electrodes;

exciting said second film forming gas to form a second film by second chemical

removing said substrate from said reaction chamber after the formation of said first and second films;

introducing a cleaning gas into said reaction chamber through said other one of the electrodes; and

conducting a cleaning of an inside of said reaction chamber by using said cleaning gas to remove layers caused by at least first and second vapor phase deposition,

wherein one of the first and second films comprises silicon nitride.